

REMARKS

Claims 1-2, 5-11 and 13-21 are all the claims pending in the application.

Claims 17-21 have been canceled without prejudice or disclaimer.

Applicants thank the Examiner for indicating that claims 2 and 12 would be allowed if rewritten in independent form. However, these claims have not been rewritten at this time because the claims from which they depend should be allowable for the reasons discussed below.

PRIOR ART REJECTIONS

The Examiner has rejected claims 1, 8, 10, 15 and 16 under 35 U.S.C. § 103(a) as being unpatentable over Lee (U.S. App. No. 2005/0040508) in view of Go (U.S. App. No. 2005/0012195). Applicants traverse these rejections because the cited references fail to disclose or suggest all of the claim limitations and because one of skill in the art would not be motivated to combine the references.

As acknowledged by the Examiner, Lee is silent on the feature of the first encapsulant filling the secondary opening around the second plurality of wires and covering the second secondary substrate face. However, the Examiner argues that Go discloses this feature in that the protective member and the photoresist can be construed as the first encapsulant, and therefore, it would be obvious to combine both disclosures to arrive at the present invention.

The present claimed invention as defined by independent claims 1 and 10 provides a secondary IC structure over a base IC structure. To enable stacking of the secondary IC structure over the base IC structure, the secondary IC structure is provided with the first encapsulant which, not only protects the second plurality of wires from the environment, but also supports the secondary IC structure sufficiently to prevent the second plurality of wires from contacting the first semiconductor chip as can be readily seen from FIGS. 5 to 8 of the present application

[see also para 7 of Dr. Anthony Sun Yi Sheng's Declaration submitted with the previous response dated 11 Feb 2009].

Lee uses a combination of adhesive and flexible cable to enable the secondary IC structure to be stacked over the base IC structure. A person skilled in the art, with knowledge of the Lee, and wanting to stack two IC structures vertically, would not be motivated to use a first encapsulant to fill the secondary opening around the second plurality of wires and covering the second secondary substrate face, because Lee does not teach or suggest this feature. Even if the skilled person were to encapsulate the opening 322 and wires 304, the end result would still differ from the present invention.

Go et al. discloses a secondary IC structure stacked on the base IC structure. A first encapsulant (protective member 140) fills the secondary opening around the second plurality of wires and covering partially the second secondary substrate face. The remaining areas of the second secondary substrate face, except where the interconnection pads 115 are, are covered with photoresist 116.

Combining Lee with Go et al would also not result in the present invention. The "encapsulant" comprising the protective member and the photoresist as construed by the Examiner, does not enable stacking of the secondary IC structure on the base IC structure at all. Instead, Go et al uses solder balls 280 to provide clearance and electrical communication between the secondary IC structure and the base IC structure to enable the stacking. Accordingly, a person skilled in the art when combining the disclosures of Lee and Go et al, would be modifying Lee to include encapsulant at the opening 322 or solder balls, which is clearly different from the present claimed invention.

Moreover, paragraph [0029] of Lee teaches that solder balls interposed between packages are a prime cause leading to an increase in package stack height and hence would not motivate the skilled person to look to Go which uses solder balls between packages for stacking.

For the reasons above, we disagree with the Examiner that the independent claims 1 and 10 are obvious. Likewise the dependent claims 8, 15 and 16 are also not obvious in light of the cited art.

The Examiner has rejected claims 5-7, 11, 13 and 14 under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Go and Huang (U.S. App. No. 2002/0046854). Applicants traverse these rejections because the cited references fail to disclose or suggest all of the claim limitations and because one of skill in the art would not be motivated to combine the references.

These dependent claims all depend from claims 1 or 10, and should be allowable at least based on their dependence for the reasons described above and because Huang fails to make up for the deficiencies of Lee and Go.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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